

APRIL/MAY 2025

**23UMB41 — IMMUNOLOGY AND  
IMMUNOTECHNOLOGY**

Time : Three hours

Maximum : 75 marks

**SECTION A — (10 × 2 = 20 marks)**

Answer ALL questions.

1. What is the role of the thymus in T-cell maturation?
2. Differentiate between B-cell receptors (BCRs) and T-cell receptors (TCRs).
3. Define epitope.
4. What is the role of IgE in allergic reactions?
5. Name two purification techniques for antibodies.
6. Define polyclonal antibodies.
7. Define graft-versus-host disease (GVHD).
8. What is tumor-infiltrating lymphocytes (TILs)?





9. List out the examples of diseases related to Type III hypersensitivity reactions.
10. What is anaphylaxis?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the activation of B-cells and their role in immune response.

Or

- (b) Distinguish between humoral and cell-mediated immunity.

12. (a) Discuss complement fixation and its role in immune response.

Or

- (b) Outline the concept of haptens and their immunological significance.

13. (a) Discuss the principles and steps involved in flow cytometry.

Or

- (b) Summarize the RAST technique and its application in allergy testing.

14. (a) List out the steps involved in the activation of the immune response against tumors.

Or

- (b) Explain the structure and function of MHC molecules.

15. (a) Discuss the various stages of HIV infection.

Or

- (b) Outline the process of antibody-mediated cytotoxicity in Type II hypersensitivity.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Demonstrate the structure, functions, and significance of lymphoid organs.

17. List out the classification of vaccines and their role in disease prevention.

18. Elaborate note on the RIA technique, including its advantages and disadvantages.

19. Explain the steps involved in organ transplantation and immune rejection mechanisms.

20. Discuss the immunological basis of autoimmune diseases and the role of T and B cells.

